applications if the total user interface-style integration takes more time. The present invention can be implemented simply by software and does not require significantly higher processing power or memory. The present invention allows for new input concepts and redesigned user interface styles. The present invention allows the use of previously impossible user interface features with dual point user input while utilizing existing hardware technology.

[0132] It may be noted that the present invention although described only in the case of plane and rectangular touch input devices can also be applied to round, oval or e.g. circular or ring sector shaped touch input devices. It is also possible to implement the present invention in a curved or even spherical touch input device. In case of a non-euclidic touch sensor distribution, a corrector term can be used to implement the present invention.

[0133] It may also be noted that throughout the whole description the expression touch pad is used to denote any kind of touch based input devices such as touch pads, touch screens and touch displays.

[0134] It may further be noted that the present invention can also be applied to the detection of more than two user-input points. Starting from a two-point user input, and in case a second discontinuous signal transition is observed, the first middle point can be used to calculate third user-input point on the touch pad. A problem arising from said three-point input resides in a not unambiguous relation between a potential movement of the middle point of three points. In a three-point input it is not clear which of the three points actually caused a motion of the actual middle point. But also there are some exceptions, a three-point user input such as can be a subsequent pressing of combination such as 'String-Alt-Del' known to any personal computer (PC) user to restart the PC.

[0135] This application contains the description of implementations and embodiments of the present invention with the help of examples. It will be appreciated by a person skilled in the art that the present invention is not restricted to details of the embodiments presented above, and that the invention can also be implemented in another form without deviating from the characteristics of the invention. The embodiments presented above should be considered illustrative, but not restricting. Thus the possibilities of implementing and using the invention are only restricted by the enclosed claims. Consequently various options of implementing the invention as determined by the claims, including equivalent implementations, also belong to the scope of the invention.

1. A method for recognizing a dual point user input on a touch based user input device, comprising

forming a first position signal related to a first user input to said input device,

forming a second position signal related to a subsequent second user input to said input device, and

determining if said second position signal has its source in a simultaneous dual point user input.

2. A method according to claim 1, further comprising:

generating a third position based on said first position and said second position.

3. A method according to claim 2, further comprising:

using said first and third positions, as coordinates of a dual point user input.

4. A method according to claim 1, further comprising:

using said first position, as a coordinate for a single point user input, and

using presence of said dual user input for allocating a first function to said first position.

5. A method according to claim 1, further comprising monitoring said first and second position signals, and the gradient of a position signal from said first position to said second position.

6. A method according to claim 2, further comprising:

storing said third position.

7. A method according to claim 2, further comprising

detecting a motion of said second position,

setting one of said first position or said third position as a point of reference, and

calculating a motion of said position that is not said point of reference, by reflecting said point of reference on said second position.

8. A method according to claim 5, further comprising receiving a signal indicative if said first position or said third position is to be used as a point of reference.

9. A method according to claim 1, wherein said determination, if said second position has its source in a simultaneous dual point user input, is based on at least one boundary area defined by possible input options and said first position, wherein dual point user inputs are excluded if said second position is not detected to be within one of said boundary areas.

10. A method according to claim 9, wherein said boundary area is a half edge distance area from said first position.

11. A method according to claim 1, further comprising setting a dual point user input flag, if said second position input has its source in a dual point user input.

12. A method according to claim 11, further comprising:

using said second position as the actual position of a single point user input, if said dual point user input flag is set and if it is determined that said second position has its source in a simultaneous dual point user input.

13. A method according to claim 2, further comprising displaying an indication that the dual point user input is used.

14. A method according to claim 2, further comprising:

setting said second position as the new position of an actual single point user input, if said second position input has not its source in a dual point user input.

15. A method according to claim 1, wherein said input device is capable of only outputting a single input position signal that depends on the actual user input.

16. A method according to claim 1, further comprising storing said first position signal.

17. A method according to claim 1, wherein said second position is differing from said first position.

18. A method according to claim 1 further comprising:

forming a fourth position signal related to a subsequent third user input to said input device, and

determining if said fourth position signal has its source in a simultaneous triple point user input.